

Uniclass L751:P2:N324	EPIC L1:X2:Y421
CI/SfB (57.9) Rf9	(K2)

July 2003

Promat



DUCTWORK SOLUTIONS

● DURADUCT LT[®] ● DURADUCT SMT[®] ● DURADUCT SR[®]



TRIED AND TESTED SYSTEMS FOR LIFE SAFETY

DURADUCT SMT® and LT® ductwork systems are made from DURASTEEL® sheet; a non-combustible composite of fibre cement, reinforced by mechanically bonded galvanised steel sheeting.

DURASTEEL® is highly resistant to moisture and retains its mechanical integrity even when saturated. It will not absorb combustible fluids such as cooking oil in kitchen extract ducts and has exceptional fire resistant qualities.

Systems are available which will provide up to four hours protection to suit the demands of modern developments.

DURASTEEL® withstands hose stream action and, because of its very low moisture absorption, it can be used externally. It is not susceptible to the damage often caused by moisture or sprinkler activation during the early stages of delivery and installation of a fire-rated ductwork system.

DURASTEEL® has a tremendous resistance to impact and has high flexural strength, giving added protection in the early stages of construction and throughout the life of the building.



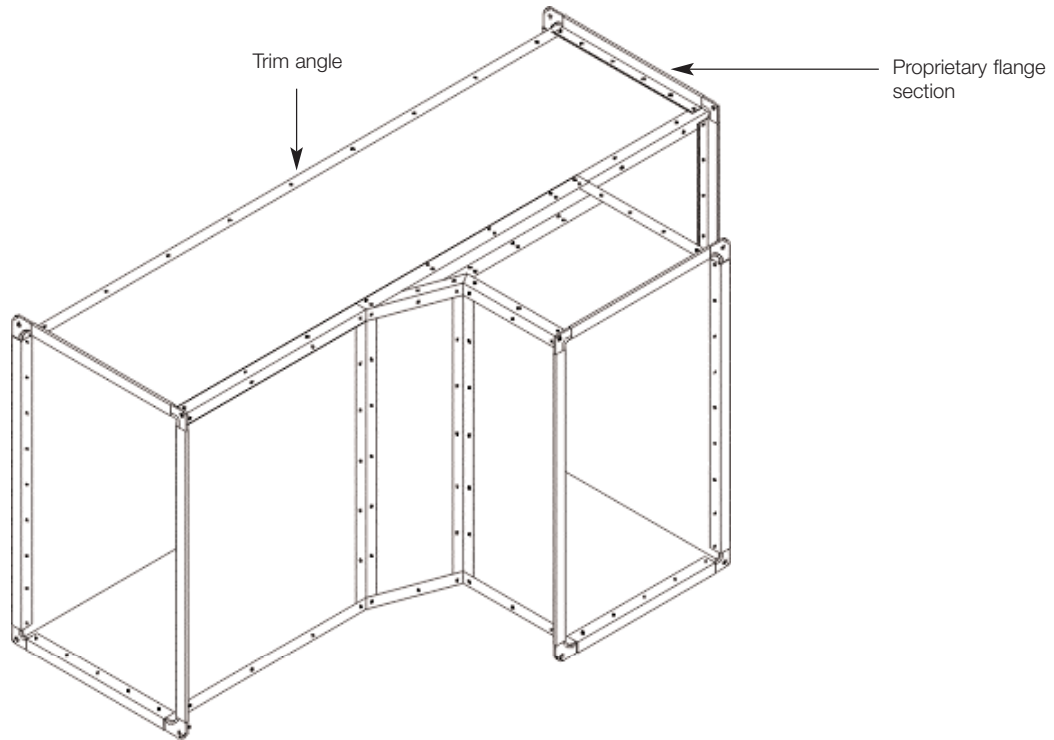
DURADUCT SMT® **DURADUCT LT®**

**THE FIT AND FORGET DUCTWORK SYSTEM
FOR THE LIFE OF YOUR BUILDING**

DURADUCT SMT/LT

CONSTRUCTION

DURADUCT LT® consists of a galvanised steel inner duct overboarded with 6.0mm DURASTEEL® and finishing trim angles. The system is installed using a proprietary flange. The total thickness of standard DURADUCT LT® is nominally 7.5mm.



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TYPICAL APPLICATIONS

DURADUCT LT® is a fast track and economical DURASTEEL® based fire resisting ductwork solution which combines the airflow and wipe down characteristics of standard galvanised steel ductwork with the armour plated comfort of 'FIT and FORGET' DURASTEEL®.

The DURADUCT LT® system is manufactured by approved ductwork contractors and can be delivered to site with minimal site handling.

DURADUCT LT® is TRIED and TESTED in ductwork solutions for natural ventilation ducting, mechanical ventilation ducting, natural smoke vents, mechanical smoke vents, fire rated pressurisation ductwork and kitchen extract ducting.

PERFORMANCE

Up to 240 minutes fire resistance in accordance with the integrity and insulation criteria of BS 476: Part 24: 1987.

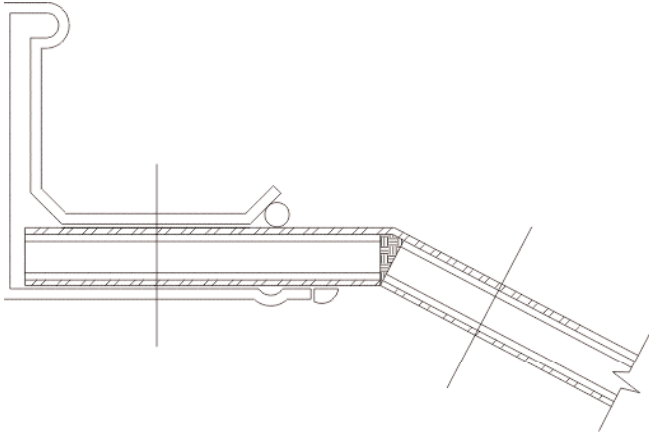
SYSTEM FEATURES

- Fire resistance from either side
- Impact resistance
- Moisture resistance
- Space-saving
- Excellent strength and integrity
- Suitable for internal and external applications
- Fit and forget (maintenance free)

PROJECT REFERENCES

- Plantation Place, London
- HQ 5, Canary Wharf
- Monks Cross Office Development, York
- Oxford Street Housing, Manchester
- Victoria House, Southampton Row, London

DURADUCT LT® PROVIDES FOR MODERN FAST TRACK FACTORY FABRICATED ON-SITE INSTALLMENTS



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DUCTWORK INSULATION MATRIX - LT®

Applications Powered Ventilation / Natural ventilation / Smoke extraction / Kitchen Extract

Notes All ductwork is tested / assessed to BS476:Part 24 (ISO 6944 - 1985)
 Type A duct - Out to In fire condition Type B duct - In to Out fire condition

Additional insulation protection may be required where the duct passes adjacent to combustible materials or hazardous areas.
 LT standard ductwork is often acceptable in risers and passing through non-combustible areas.

NATURAL VENTILATION

Minutes	Stability	Integrity	Insulation			
			Type A or B duct - 300°C	To BS 7346 pt 2 1990 (to 650°C)	Type A duct - 1000°C+	Type B duct - 1000°C+
30	Yes	Yes	LT	LT	LT	LT
60	Yes	Yes	LT	LT	LT	LT + 50mm of 60 kg/m³
120	Yes	Yes	LT	LT	LT + 50mm of 60 kg/m³	LT + 80mm of 140 kg/m³
180	Yes	Yes	LT	LT	LT + 50mm of 140 kg/m³	LT + 100mm of 140 kg/m³
240	Yes	Yes	LT	LT Insulation fails at 220 mins	LT + 90mm of 165 kg/m³	LT + 120mm of 140 kg/m³

POWERED VENTILATION / SMOKE EXTRACT

Minutes	Stability	Integrity	Insulation			
			Type A or B duct - 300°C	To BS 7346 pt 2 1990 (to 650°C)	Type A duct - 1000°C+	Type B duct - 1000°C+
30	Yes	Yes	LT	LT	LT	LT
60	Yes	Yes	LT	LT	LT + 30mm of 60 kg/m³	LT + 50mm of 60 kg/m³
120	Yes	Yes	LT	LT	LT + 50mm of 60 kg/m³	LT + 80mm of 140 kg/m³
180	Yes	Yes	LT	LT	LT + 50mm of 140 kg/m³	LT + 100mm of 140 kg/m³
240	Yes	Yes	LT	LT Insulation fails at 220 mins	LT + 90mm of 165 kg/m³	LT + 120mm of 140 kg/m³

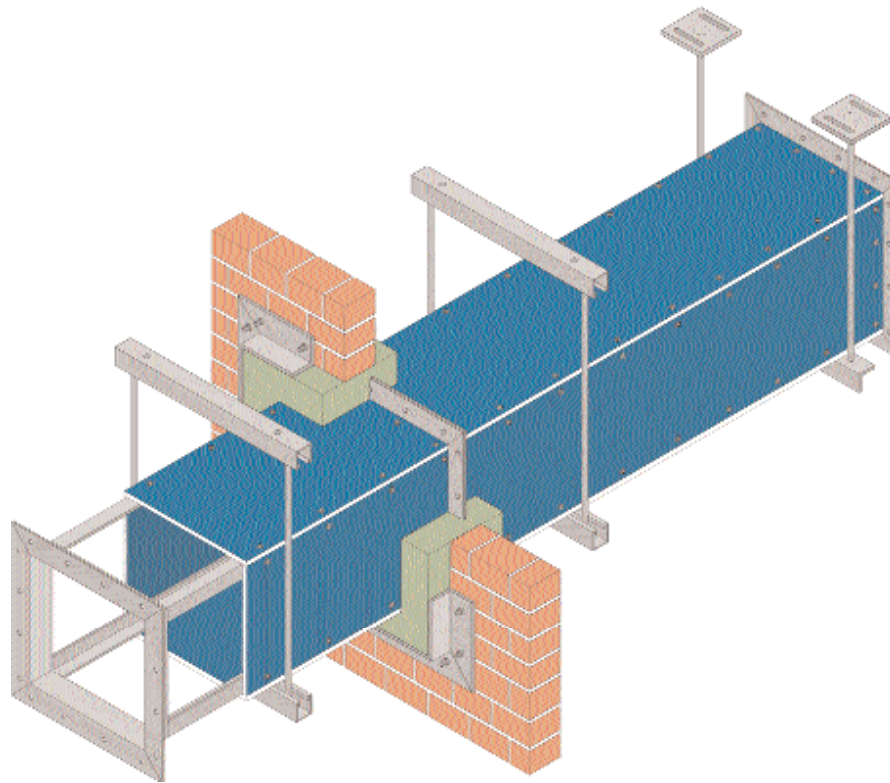
KITCHEN EXTRACT

Where main fire risk is from in to out - Type B duct, use the above table for powered ventilation / smoke extract
 Where main fire risk is from out to in - Type A duct at 1000°C+. Use the table below.

Minutes	Stability	Integrity	Type A duct - 1000°C+
60	Yes	Yes	LT + 50mm of 165 kg/m³
120	Yes	Yes	LT + 90mm of 165 kg/m³

CONSTRUCTION

The SMT system is formed by fixing 9.5mm, DURASTEEL® sheets on to a welded or cleated, prefabricated steel skeletal framework, minimum 3mm thick. The sheets are fixed using self-drilling self-tapping screws, with PROMASEAL® mastic applied before fixing to the frame. Flanged lengths of ductwork are bolted together trapping the PROMASEAL® mastic between the mating flanges. The SMT system can be constructed in 1, 2, 3 or 4 sided configurations.



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TYPICAL APPLICATIONS

DURADUCT SMT®- Fireblast, has been tested to provide high levels of blast and fire protection making the system uniquely suitable for potentially explosive environments such as Electrical transformer and switch gear rooms.

DURADUCT SMT® is also TRIED and TESTED in ductwork solutions for smoke control, smoke exhaust, fresh air ventilation, kitchen extraction, the fire protection of building services, pressurisation riser shafts, lift-shaft protection, protection of power cables and services.

PERFORMANCE

Up to 240 minutes fire resistance in accordance with the integrity and insulation criteria of BS 476: Part 24: 1987.

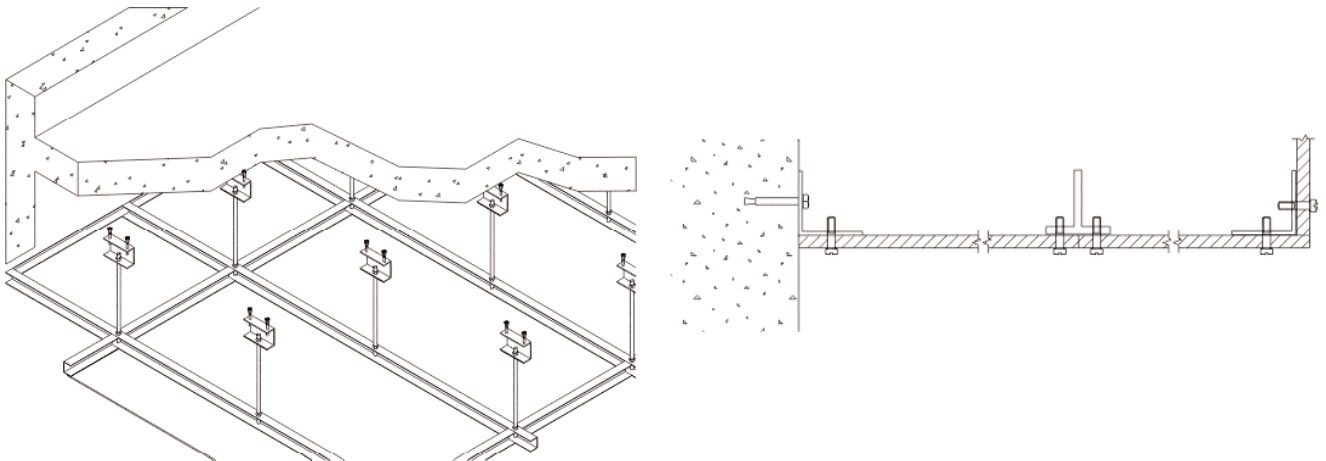
SYSTEM FEATURES

- Fire resistance from either side
- Impact resistance
- Blast resistance
- Moisture resistance
- Space-saving
- Excellent strength and integrity
- Suitable for internal and external applications
- Fit and forget (maintenance free)

PROJECT REFERENCES

- Tower Place Offices, London
- Jubilee Line Extension, London
- Lion Plaza, London
- Docklands Light Railway

DURADUCT SMT® MAY BE CONSTRUCTED IN 1, 2, 3 OR 4 SIDED VERSIONS. THIS VERSATILITY SAVES SPACE, PROGRAMME TIME AND MATERIAL COST



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DUCTWORK INSULATION MATRIX – SMT® SYSTEM

Applications Powered Ventilation / Natural ventilation / Smoke extraction / Kitchen Extract

Notes All ductwork is tested / assessed to BS476: Part 24 (ISO 6944 - 1985)
 Type A duct - Out to In fire condition Type B duct - In to Out fire condition

Additional insulation protection may be required where the duct passes adjacent to combustible materials or hazardous areas.
 SMT standard ductwork is often acceptable to Building Control when used in risers and passing through non-combustible areas without additional protection.

NATURAL VENTILATION

Minutes	Stability	Integrity	Insulation			
			Type A or B duct - 300°C	To BS 7346 pt 2 1990 (to 650°C)	Type A duct - 1000°C+	Type B duct - 1000°C+
30	Yes	Yes	SMT	SMT	SMT	SMT + 50mm of 60 kg/m³
60	Yes	Yes	SMT	SMT	SMT	SMT + 50mm of 60 kg/m³
120	Yes	Yes	SMT	SMT	SMT + 50mm of 60 kg/m³	SMT + 80mm of 140 kg/m³
180	Yes	Yes	SMT	SMT	SMT + 50mm of 140 kg/m³	SMT + 100mm of 140 kg/m³
240	Yes	Yes	SMT	SMT Insulation fails at 220 mins	SMT + 90mm of 165 kg/m³	SMT + 120mm of 140 kg/m³

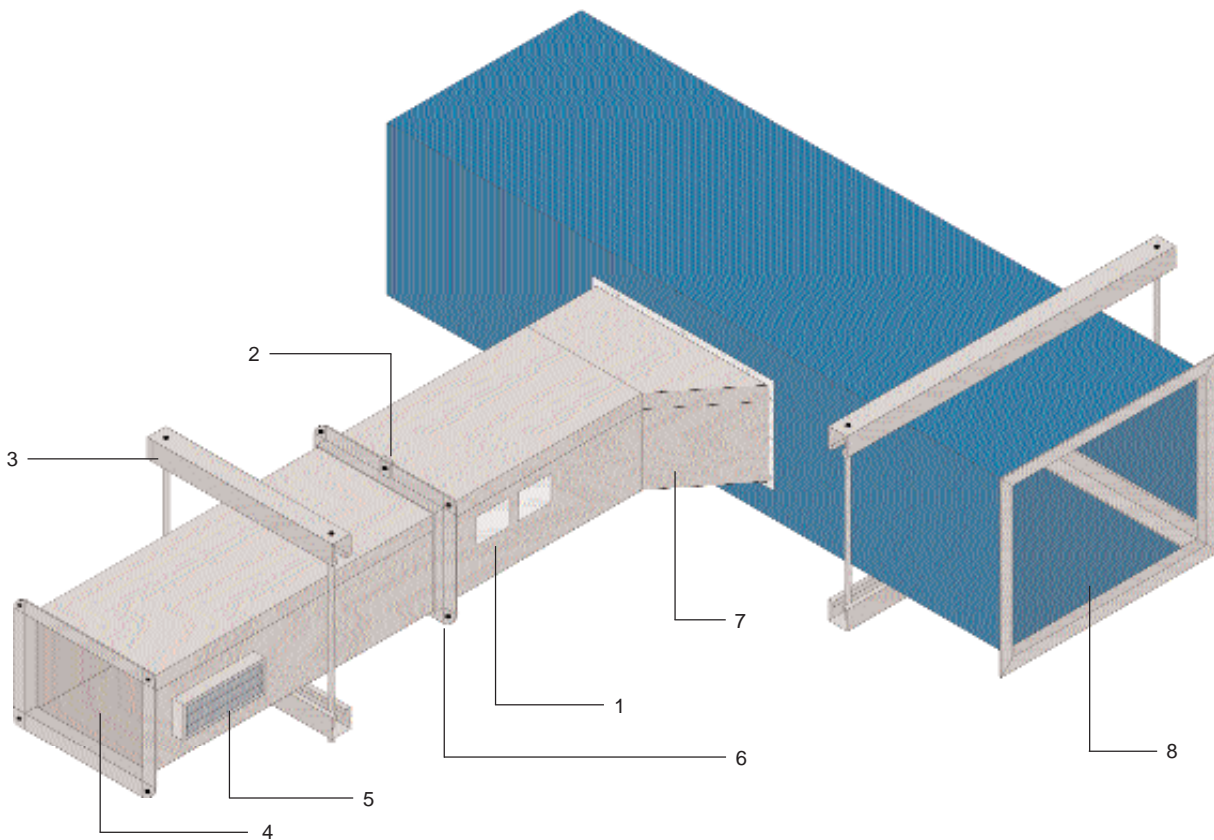
POWERED VENTILATION/SMOKE EXTRACT

Minutes	Stability	Integrity	Insulation			
			Type A or B duct - 300°C	To BS 7346 pt 2 1990 (to 650°C)	Type A duct - 1000°C+	Type B duct - 1000°C+
30	Yes	Yes	SMT	SMT	SMT	SMT + 50mm of 60 kg/m³
60	Yes	Yes	SMT	SMT	SMT + 30mm of 60 kg/m³	SMT + 50mm of 60 kg/m³
120	Yes	Yes	SMT	SMT	SMT + 50mm of 60 kg/m³	SMT + 80mm of 140 kg/m³
180	Yes	Yes	SMT	SMT	SMT + 50mm of 140 kg/m³	SMT + 100mm of 140 kg/m³
240	Yes	Yes	SMT	SMT Insulation fails at 220 mins	SMT + 90mm of 165 kg/m³	SMT + 120mm of 140 kg/m³

KITCHEN EXTRACT

Where main fire risk is from in to out - Type B duct, use the above table for powered ventilation / smoke extract
 Where main fire risk is from out to in - Type A duct at 1000°C+, use the table below.

Minutes	Stability	Integrity	Type A duct - 1000° C+
Minutes	Stability	Integrity	Type A duct - 1000°C+
60	Yes	Yes	LT + 50mm of 165kg/m³
120	Yes	Yes	LT + 90mm of 165kg/m³



DURADUCT® SR steel run-out ducting (connected to a DURASTEEL® smoke extract duct system)

DD/SR 60 – 120 DURADUCT STEEL RUN-OUT DUCTING

A steel duct system tested to BS 476: Part 24, built to enhanced DW144 standards, it provides 60 or 120 minutes stability/integrity. This ducting is for use together with the DD/SMT and DD/LT ranges for connection largely between the main smoke extract system and grilles where fire insulation performance is not required.

Additionally, the system may be used for smaller cross-section extract ducts that are located within protected shafts. These shafts provide the required fire compartmentation and the aesthetic finishes, such as those often used for toilet extract ducting.

COMPONENTS

- Identification labels (1).
- Clamp (2).
- Duct support system (3).
- DURADUCT® steel run-out duct system DD/SR (4).
- Grille (5).
- 'Knock on flanges' (6).
- Shoe connection (7).
- Durasteel DD/SMT or DD/LT (8).

PERFORMANCE

The DD/SR Range has been tested to:

- BS 476: Part 24: 1987 and meets the fire stability and integrity requirements for up to 120 mins.
- It maintains 75% cross-section and is suitable for smoke extract ducting.
- Air Leakage A -C (DW144).

Please note: The cross section of the DD/SR duct system is limited to 0.2m² with no side greater than 0.75 metres wide.

Ducts outside this range are manufactured from DURASTEEL®.

For full details please contact Promat UK Limited Technical Services Department.

Description	A composite panel of fibre cement mechanically bonded to punch steel sheets on both surfaces.		
Size	2500mm x 1200mm		
		6mm thick	9.5mm thick
Nominal Weight (kg/m²)		16.8	21.0
Strength	Flexural strength (MPa) (average)	109	84
	Flexural modulus (GPa) (average)	55	40
	Impact strength (J) (4.5kg from 1m)	–	44.15
	Impact resistance (J)	–	2793
Moisture	Ambient moisture content (%)	6	6
	Movement ambient to saturated (%)	≤ 0.15	≤ 0.15
Thermal	Thermal conductance (W/m ² K)		60
	Coefficient of thermal expansion (x10 ⁻⁶ K ⁻¹)	15	15
Acoustic	Sound reduction index (dB)	28.0	29.7
Fire	Non-combustibility to BS 476:Part 4	Non-combustible	Non-combustible
	Building Regulations classification	Class 0	Class 0
	Maximum tested fire resistance (minutes)	–	360
Finishes	Sheet: Galvanised mild steel Stainless steel		
ADDITIONAL TEST EVIDENCE AVAILABLE UPON REQUEST - CONTACT PROMAT UK LIMITED TECHNICAL SERVICES DEPARTMENT			

Note: All physical property values are averages based on standard production. The figures can change dependent on the test methods used. If a particular value is of prime importance for a specification, please contact Promat Technical Services Department.



PROMAT UK LIMITED

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